distances, which I think not worth the while to deſcribe. Then immediately after the Lens I placed a Priſm, by which the trajected Light might be refracted either upwards or ſideways, and thereby the round Image which the Lens alone did caſt upon the Paper might be drawn out into a long one with Parallel Sides, as in the third Experiment. This oblong Image I let fall upon another Paper at about the ſame diſtance from the Priſm as before, moving the Paper either towards the Priſm or from it, until I found the juſt diſtance where the Rectilinear Sides of the Image became moſt diſtinct. For in this caſe the circular Images of the hole which compoſe that Image after the ſame manner that the Circles *ag*, *bh*, *ci*, &c. do
Fig. 23. the Figure *pt*, were terminated moſt diſtinctly without any Penumbra, and therefore extended into one another the leaſt that they could, and by conſequence the mixture of the Heterogeneous Rays was now the leaſt of all. By this
Fig. 23, *and* 24. means I uſed to form an oblong Image (ſuch as is *pt*) of circular Images of the hole (ſuch as are *ag*, *bh*, *ci*, &c.) and by uſing a greater or leſs hole in the Window-ſhut, I made the circular Images *ag*, *bh*, *ci*, &c. of which it was formed, to become greater or leſs at pleaſure, and thereby the mixture of the Rays in the Image *pt* to be as much or as little as I deſired.

Fig. 24. *Illuſtration.* In the 24th Figure, F repreſents the circular hole in the Window-ſhut, M N the Lens whereby the Image or Species of that hole is caſt diſtinctly upon a Paper at J, A B C the Priſm whereby the Rays are at their emerging out of the Lens refracted from J towards another Paper at *pt*, and the round Image at J is turned into an oblong Image *pt* falling on that other Paper. This Image *pt* conſiſts of Circles placed one after another in a Rectilinear order, as was ſufficiently explained in the fifth Experiment;

Experiment; and theſe Circles are equal to the Circle I, and conſequently anſwer in Magnitude to the hole F; and therefore by diminiſhing that hole they may be at pleaſure diminiſhed, whil'ſt their Centers remain in their places. By this means I made the breadth of the Image *pt* to be forty times, and ſometimes ſixty or ſeventy times leſs than its length. As for inſtance, if the breadth of the hole F be $\frac{1}{100}$ of an Inch, and M F the diſtance of the Lens from the hole be 12 Feet; and if *p* B or *p* M the diſtance of the Image *pt* from the Priſm or Lens be 10 Feet, and the refracting Angle of the Priſm be 62 degrees, the breadth of the Image *pt* will be $\frac{1}{12}$ of an Inch and the length about ſix Inches, and therefore the length to the breadth as 72 to 1, and by conſequence the Light of this Image 71 times leſs compound than the Sun's direct Light. And Light thus far Simple and Homogeneal, is ſufficient for trying all the Experiments in this Book about ſimple Light. For the compoſition of Heterogeneal Rays is in this Light ſo little that it is ſcarce to be diſcovered and perceived by ſenſe, except perhaps in the Indigo and Violet; for theſe being dark Colours, do eaſily ſuffer a ſenſible allay by that little ſcattering Light which uſes to be refracted irregularly by the inequalitеis of the Priſm.

Yet inſtead of the circular hole F, 'tis better to ſubſtitute an oblong hole ſhaped like a long Parallelogram with its length Parallel to the Priſm A B C. For if this hole be an Inch or two long, and but a tenth or twentieth part of an Inch broad or narrower: the Light of the Image *pt* will be as Simple as before or ſimpler, and the Image will become much broader, and therefore more fit to have Experiments tried in its Light than before.

Inſtead of this Parallelogram-hole may be ſubſtituted a Triangular one of equal Sides, whoſe Baſe for inſtance is